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# HELMINTHOLOGICAL ABSTRACTS //

*incorporating*  
BIBLIOGRAPHY OF HELMINTHOLOGY  
For the Year 1938.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY  
(HELMINTHOLOGY)

Winches Farm    Hatfield Road  
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June, 1938

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IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY (HELMINTHOLOGY)

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HELMINTHOLOGICAL ABSTRACTS  
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BIBLIOGRAPHY OF HELMINTHOLOGY

Abstracts in the present number are by :

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# HELMINTHOLOGICAL ABSTRACTS

INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY  
FOR THE YEAR 1938.

Vol. VII, Part I.

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## 1—Acta Medica Scandinavica.

- a. HALLÉN, L. G., 1938.—“Beobachtungen über eine Trichinoseepidemie in Lindesberg (Schweden). Bericht über 40 Fälle.” 94 (4/6), 355-365.

(1a) Hallén describes the clinical features of an epidemic of 41 cases of trichinosis in Lindesberg in Sweden, traced to eating the flesh of infected swine, and pleads for the introduction of compulsory meat inspection in that country.

V.D.V.S.

## 2—Acta Pathologica et Microbiologica Scandinavica.

- a. DUNGAL, N., 1938.—“Echinokokkus des Herzens.” 15 (1), 90-100.

## 3—Agricultural Gazette of New South Wales.

- a. ANON, 1938.—“Bulb eelworm.” 49 (3), 150-152.

## 4—Agriculture and Live-Stock in India.

- a. DATTA, S. C. A., 1938.—“Animal diseases in relation to the economy of man and India.” 8 (2), 123-140.

(4a) In this, the eighth of a series of popular articles for farmers on subjects relating to animal husbandry, Datta discusses the part played by animals in the health of the community. In a list of diseases transmissible to man from animals a number of helminths are mentioned.

D.O.M.

## 5—American Journal of Hygiene.

- a. KERR, K. B., 1938.—“The cellular response in acquired resistance in guinea pigs to an infection with pig ascaris.” 27 (1), 28-51.  
b. KERR, K. B., 1938.—“Attempts to induce an artificial immunity against the dog hookworm, *Ancylostoma caninum*, and the pig ascaris, *Ascaris lumbricoides* suum.” 27 (1), 52-59.  
c. KERR, K. B., 1938.—“Studies on the passive transference of acquired resistance to the dog hookworm and pig ascaris.” 27 (1), 60-66.  
d. EISENBRANDT, L. L., 1938.—“On the serological relationship of some helminths.” 27 (1), 117-141.  
e. SCHEIFLEY, C. H., 1938.—“The prevalence of trichinosis.” 27 (1) 142-148.



- f. SCOTT, J. A., 1938.—“The regularity of egg output of helminth infestations, with special reference to *Schistosoma mansoni*.” 27 (1), 155-175.
- g. SCOTT, J. A. & HEADLEE, W. H., 1938.—“Studies in Egypt on the correction of helminth egg count data for the size and consistency of stools.” 27 (1), 176-195.
- h. GRAHAM, G. L., 1938.—“Studies on *Strongyloides*. II. Homogonic and heterogonic progeny of the single, homogenically derived *S. ratti* parasite.” 27 (2), 221-234.
- i. KELLER, A. E., LEATHERS, W. S. & KNOX, J. C., 1938.—“The incidence and distribution of *Ascaris lumbricoides*, *Trichocephalus trichiura*, *Hymenolepis nana*, *Enterobius vermicularis* and *Hymenolepis diminuta* in seventy counties in North Carolina.” 27 (2), 258-274.
- j. LUTTERMOSER, G. W., 1938.—“Factors influencing the development and viability of the eggs of *Capillaria hepatica*.” 27 (2), 275-289.
- k. WU, K., 1938.—“Cattle as reservoir hosts of *Schistosoma japonicum* in China.” 27 (2), 290-297.
- l. SHELDON, A. J. & OTTO, G. F., 1938.—“Infection of an abnormal host (guinea pig) with *Strongyloides ratti*.” 27 (2), 298-300.
- m. MOORTHY, V. N. & SWEET, W. C., 1938.—“Further notes on the experimental infection of dogs with dracontiasis.” 27 (2), 301-310.
- n. LANDSBERG, J. W., 1938.—“The blood platelets in hookworm anemia.” 27 (2), 316-320.
- o. LUTTERMOSER, G. W., 1938.—“An experimental study of *Capillaria hepatica* in the rat and the mouse.” 27 (2), 321-340.
- p. MOORTHY, V. N., 1938.—“Observations on the development of *Dracunculus medinensis* larvae in cyclops.” 27 (2), 437-458.
- q. BRAND, T. V., OTTO, G. F. & ABRAMS, E., 1938.—“Forced calcification with parathormone in experimental trichina (*Trichinella spiralis*) infections.” 27 (2), 461-470.

(5a) Kerr finds that 30 to 50 eggs of *Ascaris lumbricoides* per gram of body weight produce a fatal verminous pneumonia in guinea-pigs within 8 days. He was, however, able to increase the resistance of the guinea-pigs to a lethal dose by means of one or more sub-lethal doses. This, however, did not last long. Immunized guinea-pigs produced a more marked cellular reaction to invading larvae, the liver being the most important organ in the destruction of the larvae. As the growth of the invading larvae in resistant animals was inhibited, Kerr believes that a humoral antibody must have been induced by the sub-lethal doses of larvae.

P.A.C.

(5b) Using antigens made from dried larvae, heat-killed larvae or from ground fresh or frozen larvae, Kerr obtained no conclusive results in his attempts to immunize mice against *Ancylostoma caninum*. However, using antigens of *Ascaris lumbricoides*, pig strain, in guinea-pigs, he found that the more antigen introduced the more likely were the animals to survive a test infection of eggs. The antigen in this case was made from dried powdered *Ascaris*.

P.A.C.

(5c) Kerr has endeavoured to transfer to other mice an acquired resistance in dogs and mice to hookworm. In some of his experiments a few of the passively immunized animals survived the test infection, all the non-immunized animals dying. Similar experiments designed to immunize guinea-pigs to pig *Ascaris* also gave inconclusive results, only half the immunized guinea-pigs surviving the test infection. He is of the opinion, however, that some antibody is present.

P.A.C.

(5d) Eisenbrandt has attempted to investigate the genetic relationship of helminths by means of serological tests and finds that serological specificity is a good indicator of close relationship. Acanthocephala, from his tests, seem to be more closely related to the Platyhelminia than the Nematelminia. He suggests further that *Ascaridia lineata* is more closely related to the Ascaridae than the Heterakidae, which family itself shows relationship with the Oxyuroidea. *Setaria* genus showed some kinship with the Ascaridae.

P.A.C.

(5e) Scheifley reports an incidence of 12.7% *Trichinella* infection in a series of 118 cadavers from Minneapolis and St. Paul hospitals, and this, combined with other surveys made since 1901, gives an incidence of 12.3% infection in the United States. Owing to the fact that dead larvae are not recovered by the digestion technique, and that direct muscle examination misses many light infections, and that the diaphragm may be uninfected in some positive cases, the true incidence of trichinosis in the United States is nearer 20%, this being the indicated percentage corrected for these errors of technique.

V.D.V.S.

(5f) That the dilution egg count method can justifiably be used for studies of infestations with *Schistosoma mansoni* and hookworms is the conclusion reached by Allen Scott as a result of a detailed analysis of considerable data. It appears that egg output is less variable when expressed in terms of eggs per c.c. of stool than in terms of eggs per unit of time. R.T.L.

(5g) From evidence obtained from a study of the weights of series of consecutive stools passed by 139 Egyptian peasants during a period of several days, Allen Scott and Headlee are of opinion that correction of helminth egg count figures for the consistency of stools is unnecessary. R.T.L.

(5h) From a study of the daily progeny of single specimens of *Strongyloides ratti* it was found that about 14% of the faecal cultures contained adults of indirect development. This percentage did not vary with the age of the parasite. The adults of heterogonic development constituted only about 2% of the total progeny. The mode of development is apparently predetermined at the time of oviposition. There is evidence of decreased infectivity as a result of prolonged restraint of heterogony by the serial passage of single homogonic larvae through 34 parasitic generations. R.T.L.

(5i) Much statistical information is given of the relative incidence of the more common helminths in the white and negro populations of North Carolina. Seven cases of *Hymenolepis diminuta* and 252 cases of *Enterobius vermicularis* were noted in 43,647 examinations. There was a low incidence of whipworm in the white population (0.5%), whereas in certain coastal areas the incidence in negroes ranged from 10.7% to 24.8%. *Ascaris lumbricoides* occurred in 9.5% of the white population. The incidence of hookworm was the reverse of that of *Ascaris* in relation to geographical divisions of the State. R.T.L.

(5j) The development of the eggs of *Capillaria hepatica* depends on temperature, moisture and type of culture. Under optimum conditions infective larvae appear in from 28 to 35 days. The majority of the eggs withstand freezing and desiccation for one to two weeks and could then



complete their development. About 10 % of the eggs remained viable after encapsulation for 7 months in the liver. R.T.L.

(5k) 12.6% of 399 cattle and 18.7% of 406 buffaloes slaughtered in Shanghai harboured *Schistosoma japonicum*. The public health and veterinary aspects of these results are discussed. R.T.L.

(5l) *Strongyloides ratti* can develop in the guinea-pig as a result of experimental infection. Functional adult worms were found only in the lungs. R.T.L.

(5m) The general procedure of infecting dogs experimentally with guinea-worm is described, and reports are made on autopsies of 3 successfully infected dogs. The local intermediaries in Mysore are *Mesocyclops leuckarti* and *M. hyalinus*. Two different types of guinea-worm embryos are described. To ensure infection about 50 infective larvae were necessary. It is suggested that the adults, by migrating in the brain and meninges, may cause meningitis and epileptiform seizures. R.T.L.

(5n) Landsberg finds that the number of thrombocytes is not reduced in hookworm anaemia. His evidence undermines the theory that a toxin inhibits the haematopoietic function of the bone marrow. R.T.L.

(5o) Luttermoser makes a comparison of the development, pathology and resistance of rats and mice to experimental infections with *Capillaria hepatica*. It is shown that rats have a much greater tolerance than mice. This natural resistance increases with age. The rat can also develop an active acquired resistance. R.T.L.

(5p) Moorthy has made a detailed study of the metamorphosis of *Dracunculus medinensis* in Cyclops, and gives a full description of the various stages. The later development of those embryos which have been described as possessing a long filiform appendage is also recorded. R.T.L.

(5q) Experiments are described which demonstrate that the subcutaneous injection of parathormone produces calcium deposits in trichina cysts similar to those resulting from the feeding of irradiated ergosterol. With parathormone such deposition occurs in 2 days whereas several weeks are required to produce this effect with ergosterol. The authors give reasons for their conclusion that these methods are inapplicable as a therapeutic agent in cases of human trichinosis, for any attempt to increase the doses to calcifying levels would be exceedingly dangerous. R.T.L.

## 6—American Journal of Tropical Medicine.

- a. MUELLER, J. F., 1938.—“The life history of *Diphyllbothrium mansonoides* Mueller, 1935, and some considerations with regard to sparganosis in the United States.” 18 (1), 41-58.
- b. FAUST, E. C. & OTHERS, 1938.—“A critical study of clinical laboratory technics for the diagnosis of protozoan cysts and helminth eggs in feces. I. Preliminary communication.” 18 (2), 169-183.

(6a) The life-history of *Diphyllbothrium mansonoides* is now given in detail by Mueller. The first intermediaries are *Cyclops leuckarti*, *C. viridis*,

*C. bicuspidatus*, and probably many other species. *Diaptomus* resists experimental infection. As many as 40 procercooids have been found in one cyclops but 3 or 4 is the usual number. The procercooids take 18 to 21 days to develop. Mice of various species are found regularly susceptible to oral infection, while rats, cats, etc., which resist oral infection, can be infected by subcutaneous injection of procercooids. In monkeys, elephantiasis of the affected part may develop. The definitive hosts are cat, bob-cat and occasionally the dog. Emaciation, anaemia, nervousness and permanent stunting result from infection in the cat. The migration of spargana causes extensive tissue damage in all hosts. There is no proliferation of the sparganum in the tissues. *D. mansonioides* does not infect frogs, rabbits or birds and favours the cat rather than the dog. In these respects it differs from *D. mansoni*.

R.T.L.

(6b) A technique for obtaining a homogeneous suspension of faeces is described, together with its use in quantitative estimations of protozoan cysts in faeces by 5 methods which are detailed. Iodine dilution, haematoxylin preparation, sedimentation, centrifugation and centrifugal flotation counts, the last using zinc sulphate solution specific gravity 1.180, are compared. The iodine dilution technique was most efficient in actual quantitative recovery of cysts, the centrifugal flotation method produced up to 1,000-fold apparent enrichment by concentration. Further experiments are being conducted with the object of discovering a method of concentrating helminth eggs and protozoan cysts by a single technique.

M.J.T.

## 7—American Journal of Tropical Medicine. Supplement.

- a. STRONG, R. P., 1938.—“Onchocerciasis in Africa and Central America. Part I.” 18 (1), Supplement, pp. 1-57.
- b. HISSETTE, J., 1938.—“Onchocerciasis in Africa and Central America. Part II. Ocular onchocerciasis.” 18 (1), Supplement, pp. 58-90.
- c. SANDGROUND, J. H., 1938.—“Onchocerciasis in Africa and Central America. Part III. i. Helminthological observations and their bearing on certain aspects of the biology of *Onchocerca*.” 18 (1), Supplement, pp. 91-107.
- d. SANDGROUND, J. H., 1938.—“Onchocerciasis in Africa and Central America. Part III. ii. On the occurrence of *Elaeophora poeli* (Vryburg, 1879) Railliet and Henry, 1912 (Filariidae) in the African buffalo (*Syncerus caffer* (Sparrman) = *Bubalus caffer*), with a discussion on its systematic relationship.” 18 (1), Supplement, pp. 108-115.
- e. BEQUAERT, J. C., 1938.—“Onchocerciasis in Africa and Central America. Part IV. The black-flies, or Simuliidae, of the Belgian Congo.” 18 (1), Supplement, pp. 116-136.

(7a) Strong reports on the researches of himself and his staff, during 1934, on onchocerciasis in Africa, and relates them to the previous researches in Central America. A number of African cases involving ocular complications are discussed, together with pathogenesis, environmental conditions, and surgical treatment.

B.G.P.

(7b) Hissette discusses the various types of lesion met with in ocular onchocerciasis and its complications, illustrating the lesions with a set of coloured plates.

B.G.P.



(7c) Sandground reports that examination of a large series of *Onchocerca volvulus* has yielded nothing new. He discusses the relationship of the adults to the nodules and the formation of the latter. Three buffaloes (*Syncerus caffer*) were found infected with a species of *Onchocerca* which invaded the loose areolar tissues surrounding the cervical portion of the nuchal ligament. This is regarded as a new species, *O. synceri*. Scanty material of, possibly, *O. gutturosa* was found in a sable antelope, *Hippotragus niger*: this species was definitely present in cattle, in the region of the ligamentum nuchae, and not forming nodules. A nodular species is reported from the eland. B.G.P.

(7d) Sandground redescribes *Elaeophora poeli* from the aorta of two *Syncerus caffer*, and discusses its systematic relationship with the species of *Onchocerca*, with which genus it has close affinities. B.G.P.

(7e) Bequaert enumerates, with notes, the 20 species of *Simulium* found in the Congo. Only *S. damnosum* and *S. neavei* are known to be efficient carriers of *Onchocerca volvulus*. B.G.P.

## 8—Annales de Parasitologie Humaine et Comparée.

- a. DESPORTES, C., 1938.—" Complément aux recherches sur la fréquence du trichocéphale et de l'oxyure à Paris." 16 (1), 17-21.
- b. SIMITCH, T., KOSTITCH, D. & MLINAC, E., 1938.—" Sur une nouvelle filaire du chien dans la Serbie du sud." 16 (1), 22-27.
- c. DOLLFUS, R. P., 1938.—" Métacercaire de *Brachylaemus* chez *Helicella obvia* (Ziegler) Hartmann, en Bulgarie." 16 (1), 28-32.
- d. DOLLFUS, R. P., 1938.—" Sur un *Cysticercus fasciolaris* Rudolphi tératologique (polycéphale)." 16 (2), 133-141.
- e. FAURE, 1938.—" Traitement par le froid artificiel de la spirurose cutanée des équidés." 16 (2), 142-145.

(8b) An unnamed species of *Filaria*, believed to be new, is reported from tubercles under the muscular coat of the thoracic oesophagus of 44.8% of the dogs in Skoplje in southern Serbia. The males measure 4.5 to 5.5 cm. and the females 5 to 6.5 cm. One spicule measures 2.5 to 2.9 mm. and a second (named accessory piece) is given as 620 to 150 $\mu$ . The papillae are not described but appear, somewhat indefinitely outlined, in a text figure. The chief vector is *Anopheles maculipennis* of which 3% are naturally infected. The embryos in the blood measure 195 to 220 $\mu$  by 5 to 6 $\mu$ . R.T.L.

(8d) Dollfus describes a cyst of *Cysticercus fasciolaris* from a white mouse which was polycephalous. There were 6 branches emanating from the cyst, each of which was perfect morphologically, agreeing with the scolex of the adult worm *Taenia taeniaeformis*. P.A.C.

(8e) Faure found that ethyl chloride in the form known in human surgery as "kélène" was an effective cure for cutaneous habronemiasis in horses. Four sprayings a day with intervals of 3 hours were made and these were reduced to 3 when the sores began to show a tendency to heal. Complete cure was effected in 3 weeks. That the results were due to the refrigerating action of ethyl chloride and not to its chemical properties was shown by the equally beneficial effect of liquid CO<sub>2</sub> which was sprayed on the sores from metallic bottles with a fine jet. The author considers it important that the



applications should not be unduly spaced and not discontinued too soon. "Kélène" is recommended for isolated cases, and CO<sub>2</sub> where a large number of sores are to be treated.

D.O.M.

### 9—Annals and Magazine of Natural History.

- a. BAYLIS, H. A., 1938.—"A new species of *Cooperia* (Nematoda) from cattle and sheep." Ser. 11, 1 (1), 68-73.
- b. ROTHSCILD, M., 1938.—"A further note on the excretory system of *Maritrema* Nicoll, 1907 (Trematoda)." Ser. 11, 1 (1), 157-158.
- c. ROTHSCILD, M., 1938.—"Preliminary note on the life-history of *Cryptocotyle jejuna* Nicoll, 1907 (Trematoda)." Ser. 11, 1 (2), 238-239.

(9a) *Cooperia spatulata* n. sp. is described from cattle and sheep in the Federated Malay States. It is most nearly related to *C. africana*, but may be distinguished by the shape and size of the spicules. R.T.L.

(9c) The commonest pleurolophocercous cercaria in *Peringia ulvae* in Britain has been shown by experiment to be the larva of *Cryptocotyle jejuna* Nicoll, 1907. It occurred in 1% to 30% of the snails examined. It is easily distinguished from *C. lingua*. The cercariae encyst in the fins and beneath the scales of *Gobius minutus* and *G. ruthensparri*. When fed to laboratory reared *Larus ridibundus*, adults were obtained 4 weeks later. R.T.L.

### 10—Archiv für Schiffs- und Tropen-Hygiene.

- a. HUECK, O. & WEN HUAN HUI, 1938.—"Zur Fuadinbehandlung bei *Opisthorchis sinensis*." 42 (1), 25-27.
- b. STROCKA, K., 1938.—"Beitrag zur Pathologie der Harnblasenbilharziose." 42 (2), 67-74.
- c. ERHARDT, A., 1938.—"Testierungsmethode Ancylostomawirksamer Präparate und chemotherapeutische Untersuchungen an der Ancylostomiasis der Katze." 42 (3), 108-117.

(10a) As a result of giving a series of 10 to 12 injections of Fouadin to 13 patients infected with *Clonorchis sinensis*, Hueck & Wen Huan Hui found negative stools in 9. In a further 24 cases given at least 5 injections, 10 were cured. The drug needs to be given with care. B.G.P.

(10c) Erhardt finds that Ascaridol and Filmaronol are effective against hookworm in cats. Carbon tetrachloride is not reliable, being effective in only a few cases, and no advantage results from combining it with Ascaridol. Of Filmaronol, a dose of 1 c.c. per kg. body weight was given on two successive days. Ascaridol was given in various doses, but 0.1 c.c. per kg. was always completely effective. Erhardt discusses the various methods of assessing efficacy, and gives data for egg-counts over a period of 50 days. B.G.P.

### 11—Archives of Pathology.

- a. CULBERTSON, J. T., 1938.—"Recent contributions to the immunology of helminthic infections." 25 (1), 85-117; (2), 256-280.

(11a) Culbertson summarizes all the recent information that has been obtained in the field of helminthic immunity. The fact of helminth resistance seems to be definitely established and the immune phenomena seem to be similar to those associated with other infectious agents. P.A.C.

## 12—Australian Veterinary Journal.

- a. EDGAR, G., 1938.—“Paramphistomiasis of young cattle.” 14 (1), 27-31.
- b. ROBERTS, F. H. S., 1938.—“Onchocerciasis.” 14 (1), 32-35.

(12a) Edgar describes a syndrome of anaemia, debility and persistent diarrhoea in calves on the south coast of New South Wales, occurring in the late winter months. The condition, which may have a mortality of 30%, is due to the migration of numerous young *Paramphistomum cervi* from the duodenum into the reticulum and rumen, complicated by an infestation with *Monodontus phlebotomus*. A common mollusc in marshy areas in the locality is *Bulinus gibbosus*, which may therefore be the intermediary. B.G.P.

(12b) Roberts briefly annotates the species of *Onchocerca*, and supposes that the intermediary of *O. gibsoni* will be found among the Simuliidae or the Ceratopogoninae, by analogy with the known life-cycles. B.G.P.

## 13—Berliner Tierärztliche Wochenschrift.

- a. SCHIRRMEISTER, E., 1938.—“Magenwurmseuche bei einem Schwan.” Jahrg. 1938 (4), p. 49.
- b. STROH, G. & SCHMID, F., 1938.—“*Protostrongylus capreoli* nov. spec., der häufigste Lungenwurm des Rehes.” Jahrg. 1938 (9), 121-123.

(13b) Stroh & Schmid give an illustrated description of *Protostrongylus capreoli* n. sp., a lungworm of roe-deer. The larvae, with spine-bearing tails, have been found in nearly 100% of roe-deer. The adults are differentiated in a table from *P. sagittatus* of red deer, and the authors consider that *Muellerius capillaris* occurs in neither deer. Preliminary experiments suggest that at least *Agriolimax* and *Cepaea* spp. are efficient intermediaries for *P. capreoli*. B.G.P.

## 14—Boletín del Instituto de Clínica Quirúrgica.

- a. IVANISSEVICH, O. & FERRARI, R. C., 1938.—“Diagnóstico radiológico de los quistes hidáticos del pulmón.” 14 (114), 33-43.

## 15—British Medical Journal.

- a. WALSH, R., 1938.—“A swallowed pin and a round-worm.” Year 1938, 1 (4017), p. 18.
- b. BLACK, D. A. K., 1938.—“Recurrent hydatid cyst.” Year 1938, 1 (4017), p. 18.
- c. LEIPER, R. T., 1938.—“A spurious record of trichiniasis in Britain.” [Correspondence]. Year 1938, 1 (4021), p. 255.
- d. ROWCROFT, G. F., 1938.—[Two cases of trichiniasis in Britain.] [Correspondence]. Year 1938, 1 (4021), p. 255.

(15c) The outbreak of trichinosis among the boys of the training ship “Worcester” cited by Sutton refers to a reported outbreak on the training ship “Cornwall” which was published in 1879-80 by Power & Cory. The alleged outbreak was investigated at the time by Bastian and the trichina worms were diagnosed by him as free-living *Pelodera setigera*. R.T.L.



(15d) Rowcroft recalls two unpublished cases of trichinosis seen at post-mortems at St. Bartholomew's Hospital, London, in 1913-14. R.T.L.

### 16—Bulletin de la Société de Pathologie Exotique.

- a. JOYEUX, C. & SAUTET, J., 1938.—“Nouvelles recherches sur *Dirofilaria immitis* (Leidy).” 31 (2), 122-123.
- b. PEU-DUVALLO, J., 1938.—“La maladie ankylostomiasique et son traitement.” 31 (3), 220-224.

(16a) *Dirofilaria immitis*, which is a common parasite of dogs in Camargue, near Marseilles, has *Anopheles maculipennis* as its intermediate host. A lethal infestation, with the sausage stage, occurs in the malpighian tubules within 2 or 3 days. *Ctenocephalus canis* and *Rhipicephalus sanguineus* are not carriers. Experiments with *Triatoma infestans* received from Brazil give a sausage form in the proboscis but infection of the malpighian tubules was never observed and many of the microfilariae underwent degeneration.

R.T.L.

(16b) Peu-Duvallon draws attention to the occurrence of nervous and toxic symptoms as precursors of anaemia in many cases of hookworm infection. Less commonly intestinal haemorrhages and dysenteric symptoms are present.

R.T.L.

### 17—Canadian Journal of Comparative Medicine.

- a. KINGSCOTE, A. A., 1938.—“Common parasites of Canadian animals.” 2 (2), 47-55.
- b. SWALES, W. E., 1938.—“The preparation of sheep for anthelmintic medication.” 2 (2), 57-58.

(17a) Kingscote gives short notes of the common helminth and other parasites found in Canadian domesticated and wild animals, using their popular names.

J.W.G.L.

(17b) Swales found that fasting sheep for 24 hours did not cause any reduction in the abomasal contents, and concluded that, where drugs are introduced directly into the abomasum by means of oesophageal groove stimulation with copper sulphate, previous fasting was unnecessary. Results were not affected when sheep were allowed food and water before and immediately after treatment.

J.W.G.L.

### 18—Comptes Rendus des Séances de la Société de Biologie.

- a. JOYEUX, C. & BAER, J. G., 1938.—“Sur le développement des Pseudophyllidea (Cestodes).” 127 (13), 1265-1266.

(18a) Having previously shown that the plerocercoid of *Diphyllbothrium erinacei* consists of two portions, of which the non-muscular posterior portion degenerates in the intestine of the definitive host, Joyeux & Baer now describe an analogous division of the plerocercoid in *Trienophorus lucii* and *Ligula intestinalis* both of which live (at that stage) in fishes. In *Ligula* the well-developed genital rudiments and muscular bands do not extend into the posterior portion, which is inactive and degenerate.

B.G.P.

## 19—Deutsche Tierärztliche Wochenschrift.

- a. CLAUSSEN, 1938.—“Hochgradiger Befall der Leber eines Rehes mit *Fasciola hepatica*.” 46 (6), p. 88.
- b. GUIDI, 1938.—“Tierkrankheiten in italienisch-abessinischen Krieg.” 46 (9), 129-133.
- c. LIEKE, P., 1938.—“Über den Einfluss von Kalidüngemitteln auf die Eier und Larven der Pferdestrongyliden. Ein Beitrag zur Bekämpfung der Sklerostomiasis.” 46 (13), 197-203.

(19b) The diseases of animals in the Italo-Abyssinian war mentioned by Guidi include the following of helminthological interest: (i) A form of colic due to “*Schistosoma armato* whose larvae provoke a chronic endarteritis proliferans”; (ii) worms described as filarias in lungs and kidneys. [It is not clear what hosts are involved; the paper is mainly concerned with equines and camels.] B.G.P.

(19c) Lieke's laboratory experiments on the destruction of horse strongyle eggs show that Kainit is the most effective of the potash fertilizers: a 10% solution killed eggs in 4 days. The most effective component of Kainit was found to be sodium chloride, Kainit applied at the rate of 32 Zentner per hectare [12.8 cwt. per acre approx.] and mixed thoroughly with fresh horse faeces killed the eggs within 5 days. The addition of copper sulphate in the proportion of 1 to 4 of Kainit resulted in a more effective mixture—all the eggs being dead within 3 days when applied at the rate of 7 Zentner per hectare [2.8 cwt. per acre approx.]. In practice only a few of the parasites would be destroyed by Kainit manuring. Control by this fertilizer would necessitate bi-annual dressings and thorough mixing with a rake and cow-dung distributor. J.W.G.L.

## 20—Farmers Weekly.

- a. BYWATER, H. E., 1938.—“Protecting growing pigs from worms.” 8 (13), p. 52.

## 21—Farming in South Africa.

- a. MÖNNIG, H. O. & CLUVER, E. H., 1938.—“Human tapeworm and measles. Occurrence in cattle and pigs.” 13 (142), 32-33.

## 22—Fruit Grower, Fruiterer, Florist and Market Gardener.

- a. WELLINGTON, R., 1938.—“Potato eelworm and its spread. Need for seed certification.” 85 (2201), 233-234, 238.

(22a) Wellington notes the rapid increase in the distribution of *Heterodera schachtii* and discusses the rôle played by the seed potatoes grown on infected land in distributing the eelworm to fresh areas. He suggests that the certification of seed potatoes grown in uninfected land, combined with cultivation of seed free of acreage or sale restriction in uninfected areas, would check the spread of the parasite. M.J.T.



## 23—Geneeskundig Tijdschrift voor Nederlandsch-Indië.

- a. BONNE, C., 1938.—“Gnathostomiasis.” 78 (12), 671-673.

(23a) Bonne gives a very brief account of gnathostomiasis, citing a human case recorded by Maplestone & Badhuri [see Helm. Abs., Vol. VI, No. 311c].  
B.G.P.

## 24—Indian Journal of Veterinary Science and Animal Husbandry.

- a. KRISHNA IYER, P. R., 1938.—“A form of verminous ophthalmia in equines.” 8 (1), 3-11.

(24a) Krishna Iyer describes the symptoms of “periodic ophthalmia” in the eyes of horses at Montgomery and Probynabad in the Punjab. No seasonal incidence was found to occur but the disease was found to be on the increase between the years 1928 and 1936. The histological study of the lachrymal glands and the eyes showed that the intense inflammation was caused by microfilariae which were probably the larvae of some onchocercoid worm. Treatment with antimony preparations appeared to be of value.

J.W.G.L.

## 25—Indian Medical Gazette.

- a. RISHWORTH, H. R., 1938.—“Adult filarial worm of unknown species removed from the skin of a human subject.” 73 (1), 7-8.  
b. MAPLESTONE, P. A., 1938.—“A new filarial worm from a human being.” 73 (1), 8-10.  
c. SAMI, M. A., 1938.—“Hydatid disease in the Punjab.” 73 (2), 90-94.  
d. GORE, R. N., 1938.—“Ichthyol as a treatment for guinea-worm.” 73 (3), p. 139.

(25a) Two female filaria worms were removed by Rishworth from (i) an irritating irregular erythematous patch on the neck and (ii) from the conjunctiva in a European lady who had lived in India since 1933. R.T.L.

(25b) A description is given of two unfertilized female filaria worms removed by Rishworth from a European resident in India. The parasite is clearly unlike *Filaria bancrofti*. It cannot be definitely identified as the adult of *Microfilaria malayi* as only the microfilaria of this form is known and in this case no microfilariae were present in the blood. These worms are “provisionally” named *Loa inquirenda*, as the cuticle has bosses and in some other respects resemble the female of *Loa loa*. It is however two or three times as long, the posterior extremity is straight and the anus is subterminal.

R.T.L.

## 26—Japanese Journal of Zoology.

- a. YAMAGUTI, S., 1938.—“Studies on the helminth fauna of Japan. Part 22. Two new species of frog cestodes.” 7 (4), 553-558.  
b. YAMAGUTI, S., 1938.—“Studies on the helminth fauna of Japan. Part 23. Two new species of amphibian nematodes.” 7 (4), 603-607.  
c. YAMAGUTI, S., 1938.—“On the life history of *Loxogenes liberum* Seno, 1907, with special reference to the cercaria.” 7 (4), 609-611.

(26a) No cestodes have previously been reported from Japanese frogs. In this paper are described *Ophiotaenia ranae* n. sp. from *Rana nigromaculata*, and *Baerietta japonica* n. sp. from *Rana japonica*. E.M.S.

(26b) Yamaguti describes *Cosmocerca japonica* n. sp., commonly found in 3 species of *Rana* and in *Hyla arborea japonica*. From faeces discharged by a tadpole of *Rana rugosa* he describes *Gyrinicola japonica* n. g., n. sp., type of a new family, the Gyrinicolidae n. fam., the females having one ovary and two uteri, one of which is merely a sac enclosing several males. The worms are viviparous. E.M.S.

(26c) The cercaria of *Loxogenes liberum* is described from *Bulimus striatulus japonicus* near Okayama. Infected specimens were placed in a tank with dragon-fly nymphs, the metacercariae being later recovered from 2 species, *Orthetrum albistylum* and *Crocothemis servilia*. Cysts were fed to 3 *Rana nigromaculata*, one immature trematode being recovered at post-mortem after 9 days. E.M.S.

## 27—Journal of Agricultural Research.

- a. STEINER, G., 1938.—“Nematodes infesting red spiderlilies.” 56 (1), 1-8.

(27a) Steiner has found that the bulbs and roots of the red spiderlily (*Lycoris radiata* Herb.) are attacked by nematodes in the South Atlantic region of U.S.A. In some bulbs occurred *Ditylenchus dipsaci* (infection probably derived from affected narcissi), *Aphelenchoides fragariae* and *Cephalobus persegnis* (one bulb). The roots of all the bulbs examined harboured *Rotylenchus brachyurus* n. sp. The new parasite is described and figured and the pathology of its attack is dealt with. *Dorylaimus subtilis* was found in some of the roots. T.G.

## 28—Journal of the American Veterinary Medical Association.

- a. SCHWARTZ, B., 1938.—“Trichinosis in swine and its relationship to public health.” [Paper presented at the 41st Annual Meeting of the U.S. Live Stock Sanitary Association.] 92 (3), 317-344.  
 b. ANON, 1938.—“Report of the Committee on Parasitic Diseases.” [Presented at the 41st Annual Meeting of the U.S. Live Stock Sanitary Association.] 92 (3), 429-433.

(28a) After a short account of the discovery, life-history and epidemiology of *Trichinella* infection, Schwartz gives a detailed and critical account of trichinosis in swine in the U.S.A., with particular reference to the aetiology, symptomatology and control of the disease, and the measures necessary from the public health point of view completely to eradicate the parasite are outlined. V.D.V.S.

(28b) Observations over a period of 20 years in Montana indicate that *Nematodirus* sp. has the most severe pathogenic effect of all the intestinal parasites found in sheep in the north-western States and that too much emphasis has been placed by other workers on the importance of *Haemonchus contortus*. In fluke districts severe losses are caused in sheep by secondary infection with the bacterium *Clostridium oedematiens*. The helminths of



wild animals reported to be present in the area include: *Fascioloides magna*, *Thysanosoma actinoides* and *Fasciola hepatica* in deer, *Diphyllbothrium latum* in bears and other wild carnivores, *Tetrameres crami* in ducks, and *Trichostrongylus tenuis* in wild birds.

J.W.G.L.

## 29—Journal of the Egyptian Medical Association.

- a. DIAMANTIS, A., 1938.—“Considérations sur la chimiothérapie antibilharzienne en Égypte. A propos du ‘Fouadin tolerance test’ du Prof. Khalil Bey.” 21 (2), 45-56.

(29a) Diamantis describes cases in which the administration of antimonyl preparations against bilharziasis has proved fatal to the host. The limitations of Fouadin treatment are discussed and the value of the “Fouadin tolerance test” is examined critically. The author obtained satisfactory results by a mixed treatment, injections of Fouadin being followed by a course of emetine injections.

R.H.H.

## 30—Journal of Experimental Zoölogy.

- a. KING, R. L. & BEAMS, H. W., 1938.—“An experimental study of chromatin diminution in ascaris.” 77 (3), 425-538.

## 31—Journal of Helminthology.

- a. HURST, R. H. & FRANKLIN, M. T., 1938.—“A second series of field experiments in Lincolnshire on the chemical treatment of soil infected with *Heterodera schachtii*.” 16 (1), 1-4.
- b. FRANKLIN, M. T., 1938.—“On the occurrence of *Heterodera* cysts in various soils and on the roots of *Agrostis stolonifera* L.” 16 (1), 5-16.
- c. FAWCETT, S. G. M., 1938.—“A disease of the Australian grass *Microlaena stipoides* R. Br. caused by a nematode, *Anguillulina microlaenae* n. sp.” 16 (1), 17-32.
- d. HURST, R. H. & FRANKLIN, M. T., 1938.—“Field experiments in Bedfordshire on the chemical treatment of soil infected with the potato eelworm *Heterodera schachtii*, during 1936-37.” 16 (1), 33-46.
- e. CLAPHAM, P. A., 1938.—“New records of helminths in British birds.” 16 (1), 47-48.
- f. CLAPHAM, P. A., 1938.—“Are there host strains within the species of *Syngamus trachea*?” 16 (1), 49-52.
- g. CLAPHAM, P. A., 1938.—“The relation of helminthiasis to leukaemia in domestic fowls.” 16 (1), 53-56.
- h. HURST, R. H., 1938.—“On the relative distribution of cysts of *Heterodera schachtii* and a chemical dressing incorporated with infected land by means of a rototiller.” 16 (1), 57-60.

(31a) During 1937 potatoes were grown again on plots which had received calcium cyanamide (30 cwt. per acre) before the 1936 crop. Other plots were treated with 40 cwt. per acre four months before planting. The total yields (Eclipse potatoes) were: (i) Control, 3.4 tons per acre, (ii) Untreated 1937, following  $\text{CaCN}_2$  (30 cwt. per acre) 1936, 2.9 tons per acre, (iii)  $\text{CaCN}_2$  (40 cwt. per acre) 1937, 8.0 tons per acre. The beneficial effect of cyanamide treatment was confined to one season, and was due to the failure under field conditions to secure sufficiently intimate mixing of chemical with

soil. Parallel pot experiments were carried out with the same soil, air-dried and sieved, and then mixed by hand with an amount of cyanamide equivalent to a dressing of 40 cwt. per acre. The soil was kept slightly moist for one month and Eclipse seed potatoes were then planted. Under these conditions the chemical was lethal to the eggs contained in all the cysts of *H. schachtii*.

R.H.H.

(31b) Eelworm cysts were found by Franklin in soil from pastures and arable land in Hertfordshire. Two types of cysts are described, ovoid and lemon-shaped. Ovoid cysts found attached to the roots of *Agrostis stolonifera* L. and having what appear to be punctations on the cyst wall are tentatively regarded as *Heterodera punctata* Thorne. Embryos obtained from the eggs of these cysts have more finely pointed tails than those from eggs of various strains of *H. schachtii*, and from the lemon-shaped cysts found in the soils examined. No plants were found parasitized by the lemon-shaped cysts.

M.T.F.

(31c) Fawcett describes and figures a new plant-parasitic nematode, *Anguillulina microlaenae* n. sp., which causes galls on the leaves, leaf-sheaths, inflorescences and rhizomes of an Australian grass, *Microlaena stipoides*. In addition to describing the anatomy of the adults and larvae, she gives particulars of the life-cycle and discusses the pathology of gall formation.

T.G.

(31d) Hurst & Franklin carried out experiments in Bedfordshire during 1936, on the chemical treatment of potato-sick land. Two 6 × 6 Latin square arrangements were used. On the first, the treatments were control, precipitated Fe<sub>2</sub>O<sub>3</sub>, levigated Fe<sub>2</sub>O<sub>3</sub>, crude Fe<sub>2</sub>O<sub>3</sub>, Fe powder and zinc oxide. The yield (King Edward potatoes) following treatment with levigated ferric oxide was not significantly different from the control yield, but in each of the other treatments the yield was significantly lower. On the second Latin square various dressings of calcium cyanamide were applied. King Edward potatoes were planted very late and the yields obtained were of value only for purposes of comparison. The yields for control and CaCN<sub>2</sub> 10, 20, 25, 30 and 40 cwt. per acre were, respectively, 47.7, 79.5, 123.0, 122.8, 103.0 and 96.0 lb. per plot. The plots which received 40 cwt. per acre of CaCN<sub>2</sub> were the only ones on which the number of new cysts formed was very small. Potatoes (Majestic) were grown on these plots during 1937, with no further treatment other than artificials. The yields were, respectively, 5.2, 5.0, 6.3, 6.3, 5.8 and 6.3 tons per acre. The plots which received metallic oxides in 1936 were treated with varying amounts of CaCN<sub>2</sub> four months before Majestic seed potatoes were planted. A treatment with ammonium sulphate plus lime, equivalent in N<sub>2</sub> and Ca content to 20 cwt. per acre of CaCN<sub>2</sub> was included. The yields for control, CaCN<sub>2</sub> 20, 25, 30 and 40 cwt. per acre, and (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> + Ca(OH)<sub>2</sub> were, respectively, 2.7, 6.0, 7.1, 7.1, 9.1, and 4.5 tons per acre.

R.H.H.

(31e) New hosts are recorded for *Davainea proglottina*, *Raillietina tetragona*, *Anomotaenia microrhyncha*, *Echinostoma revolutum*, *Harmostomum commutatum*, *Trichostrongylus tenuis*, *Capillaria longicollis*, *Ascaridia compar*, *Heterakis gallinae* and *Prosthynchus transversus*.

P.A.C.



(31f) Clapham brings forward experimental evidence that there are no physiological strains in *Syngamus trachea*, for material obtained from a variety of wild birds has been shown to be easily infective for several domestic species of birds, when an intermediate host is used. P.A.C.

(31g) Clapham puts forward the theory that the resistance of domestic hens to helminthiasis is lowered when leukaemia is also present. In the resulting helminthic fauna there is a large preponderance of young forms, suggesting a break-down of immunity. P.A.C.

(31h) Hurst commenced a field experiment in which soil infested with cysts of *H. schachtii* was treated with very heavy chemical dressings. The lay-out was in the form of four randomized blocks of five treatments: control,  $\text{CaCN}_2$  2, 3 and 4 tons per acre, and ammonium sulphate plus lime equivalent in  $\text{N}_2$  and Ca content to 4 tons per acre of  $\text{CaCN}_2$ . The land was rototilled twice and left for 9 days. Soil samples from varying depths below the surface were then taken to determine the relative distribution of cysts and chemicals. It was found that the cysts were fairly evenly distributed amongst the soil to a depth of about 5 inches, but fell off in numbers at greater depths. Estimations of pH and "Kjeldahl" nitrogen showed that most of the chemical dressing had in each case remained in the upper 5 or 6 inches of soil. Further soil samples were taken after 8 weeks to examine the hatching power of the contained cysts. The only samples in which the chemical appeared to have been lethal to the contents of all the cysts were the upper portions treated with  $\text{CaCN}_2$  and ammonium sulphate plus lime in the heaviest dressings of 4 tons per acre. R.H.H.

### 32—Journal of Parasitology.

- a. LA RUE, G. R., 1938.—"Life history studies and their relation to problems in taxonomy of digenetic trematodes." 24 (1), 1-11.
- b. CRAWFORD, W. W., 1938.—"Observations on the life cycle of *Loxogenes arcanum* Nickerson (Trematoda)." 24 (1), 35-44.
- c. LEVINE, P. P., 1938.—"Infection of the chicken with *Capillaria columbae* (Rud.)." 24 (1), 45-52.
- d. SHULER, R. H., 1938.—"Some cestodes of fish from Tortugas, Florida." 24 (1), 57-63.

(32a) La Rue considers that a natural taxonomic system of the Digenea must be based upon comparative studies of all stages in their life-histories. Our classification of the cercariae should be revised in the light of recent advances. In the adult little value should be attached to the suckers for family or superfamily rank. Consideration must be given to the arrangement of the reproductive organs. R.T.L.

(32b) Crawford describes experiments which demonstrate that 9 different species of dragonfly naiads harbour the metacercariae of *Loxogenes arcanum* and that frogs become infected by feeding on these insects. The worms develop rather slowly, reaching maturity in the frog in 4 to 5 weeks, and are full grown in 8 to 9 weeks. After the first week, during which they are free in the duodenum, the young trematodes invade the duodenal wall and encyst. R.T.L.

(32c) Levine found that the eggs of *Capillaria columbae* became infective in 6 to 7 days at a temperature of 30°C. and that the worm matured in the host in 21 days. Severe infections with this species produced a catarrhal enteritis with desquamation of the intestinal epithelium resulting in loss of weight, emaciation and death in some of the birds. In others, the elimination of large numbers of larvae as a result of this inflammatory reaction suggested "self-cure" as a factor in their survival. Carbon tetrachloride and tetrachlorethylene were not considered efficient as anthelmintics. D.O.M.

(32d) Shuler lists 16 species of cestodes from marine fishes including many new host and new locality records. He describes 2 new species of *Tentacularea*, viz., *T. perelica* and *T. pseudodera* both from the spiral valve of *Hypoprion brevirostris*. E.M.S.

### 33—Journal of Tropical Medicine and Hygiene.

- a. CAWSTON, F. G., 1938.—"The possibility of treating schistosomiasis with unguenta." 41 (1), 8-10.
- b. CAWSTON, F. G., 1938.—"Antimony ointment and antimony rashes in the treatment of bilharziasis." 41 (2), 27-28.

(33a) Anthiomaline was mixed with Eucerinum and thoroughly massaged into the abdominal skin. No antimony was detected in the urine though a rash occurred which persisted for a week. Cawston concludes that Anthiomaline is not superior to tartar emetic for use as an unguent in bilharziasis. R.T.L.

(33b) A full course of treatment was found to be necessary in a case of bilharziasis, although the patient had received 30 c.c. of Anthiomaline and 6 grains of tartar emetic in the form of ointment, and 4 c.c. of Anthiomaline and 24 grains of tartar emetic in Eucerinum *per rectum*. R.T.L.

### 34—Journal of the Washington Academy of Sciences.

- a. CHITWOOD, B. G. & JACOBS, L., 1938.—"Stored nutritive materials in the trophosome of the nematode, *Agamermis decaudata* (Mermithidae)." 28 (1), 12-13.

(34a) Chitwood & Jacobs give details of numerous microchemical tests whereby they have determined the nature of the food globules in the trophosome of *Agamermis decaudata*. These consist of a neutral fat and a conjugated fatty-acid-protein. T.G.

### 35—Lancet.

- a. ADAMS, A. R. D., 1938.—"Case of onchocerciasis (filarial blinding), with manifestations developing in Britain." Year 1938, 1 (5975), 545-548.
- b. LANE, C., 1938.—"Sterilising filarial worms by poison." [Correspondence.] Year 1938, 1 (5976), p. 636.
- c. MURGATROYD, F., 1938.—"Onchocerciasis." [Correspondence.] Year 1938, 1 (5980), p. 865.

(35a) The interest of this case of ocular onchocerciasis lies in the fact that there were no nodules to assist in a diagnosis. The eye trouble insidiously developed but was arrested by a course of Neostibosan. R.T.L.



(35b) Lane does not accept Adams' conclusion [see previous abstract] that antimony compounds destroy *Onchocerca* larvae but not the adults. He propounds the question: Does Neostibosan sterilize temporarily the female *Onchocerca* and was that the cause of the relief which followed its administration?

R.T.L.

(35c) Commenting on Adams' case of onchocerciasis with ocular complications [see previous abstracts], Murgatroyd draws attention to the fact that cases have been recorded in Germany, France and Belgium during the last 6 years. As the ocular symptoms are due to the embryos, the surgical removal of the adults fails to effect a cure in many cases. He suggests that attempts at desensitization by graduated doses of filarial antigen might be a useful supplement to ordinary treatment.

R.T.L.

### 36—Medical Journal of Australia.

- a. PENFOLD, W. J., PENFOLD, H. B. & PHILLIPS, M., 1938.—“The distribution of *Cysticercus bovis* in the sites of election in the ox.” 25th Year, 1 (3), 107-113.
- b. PENFOLD, H. B., 1938.—“An attempt to immunize lambs against hydatid disease.” 25th Year, 1 (9), 375-377.

(36a) The examination of the sites of election of 145 oxen experimentally infected with *Cysticercus bovis* shows that the average distribution between the heart, masticatory muscles, tongue and diaphragm is in the ratio of approximately 8 : 4 : 1 : 1, and the chance of infection when only one cyst was present in these sites was in the same ratio. Examination of the heart alone would detect infection in 88% of animals where one to three cysts were present in the sites of election and probably 100% in animals containing 4 or more cysts so distributed. In lightly infected animals the ratio of infection of election sites to dressed carcase was 1 : 1, and in heavily infected 1 : 20.

J.W.G.L.

(36b) Penfold, using an antigen made of ground hydatid membrane suspended in carbolyzed hydatid fluid, has not been able to induce a resistance to hydatid in lambs. After feeding lambs, inoculated with this antigen, with *Taenia echinococcus* ova, sterile cysts measuring 2 to 5 mm. diameter were found in the liver and lungs after 9 months. He is of the opinion that faecal examination of dogs for *T. echinococcus* adult infection is not a satisfactory method, particularly in light infections. Ova of this species can be identified by measuring the embryophore, the size of which remains almost constant at  $41\mu \times 34\mu$  though the external measurement of the entire ova may vary.

P.A.C.

### 37—Medizinische Klinik.

- a. MAY, H., 1938.—“Über Wurmerkrankungen.” 34 (12), 402-403.

(37a) May reports the following helminths from 828 persons in Baden: *Ascaris* (115), *Trichuris* (69), *Ascaris* and *Trichuris* (31), *Oxyuris* (7), and tapeworm (1).

B.G.P.

### 38—Memorias de la Sociedad Cubana de Historia Natural "Felipe Poey".

- a. PÉREZ VIGUERAS, I. & MORENO BONILLA, A., 1938.—"*Physa cubensis* (Mollusca), un nuevo hospedero intermediario de *Fasciola hepatica* (Trematoda). (Nota previa)." 12 (1), p. 74.

### 39—Nature. London.

- a. TAYLOR, E. L., 1938.—"New method for the storage of nematode larvae." 141 (3561), p. 205.  
 b. RUSHTON, W., 1938.—"Blindness in freshwater fishes." 141 (3563), p. 289.

(39a) Taylor describes a simple and effective space saving technique for storing nematode larvae. They are drawn off a Baermann apparatus on to Whatman filter paper and the surplus water removed until the first signs of cockling of the filter paper result from drying at the edges. The moist filter papers are now placed face to face in a 9 cm. petri dish and the top and bottom of the petri dish are fastened together by adhesive tape to prevent drying. 91% of trichostrongylid larvae stored in this way for 12 months are alive and active. These sealed petri dishes can be stacked in an ordinary petri dish container. R.T.L.

(39b) Since Rushton [Nature, 1937, 140, 1014; see Helm. Abs., Vol. VI, Part 5] recorded blindness in rainbow trout from invasion of the lens by *Diplostomum volvulus*, further examinations have given an incidence of 5% due to the same cause. He quotes the recent work of Wesenberg-Lund on the life history of this parasite showing that the fork-tailed cercariae penetrate the skin of the fish and reach the lens by the blood stream. R.T.L.

### 40—Nederlandsch Tijdschrift voor Geneeskunde.

- a. SNOEK, W. T., 1938.—"Besmetting met *Anguillula intestinalis* (*Strongyloides stercoralis* Bavay)." 82. Jaarg., 1 (6), 633-638.

(40a) Snoek presents 2 case reports of Strongyloidiasis stercoralis, discusses the symptomatology, and describes the satisfactory results of applying de Langen's treatment: tartar emetic intravenously, combined with gentian violet orally. B.G.P.

### 41—New England Journal of Medicine.

- a. SANDGROUND, J. H., 1938.—"Newer drugs for the treatment of tapeworm infestations. Some results obtained with carbon tetrachloride, tetrachlorethylene and hexylresorcinol." 218 (7), 298-304.

(41a) Sandground reviews the treatment of tapeworms in the past, and points out that carbon tetrachloride, tetrachlorethylene and hexylresorcinol are all far less toxic and quite as efficacious taeniocides as the drugs commonly in use, i.e., male fern and pelletierine. Details of cases treated with these 3 drugs are given. Carbon tetrachloride was effective in 12 out of 16 cases infested with *Taenia saginata* or *Dipylidium latum*. The greater safety of tetrachlorethylene and hexylresorcinol determines their choice in the treatment of debilitated patients. K.S.



## 42—North American Veterinarian.

- a. ANDREWS, J. S., 1938.—“Observations on the cellular elements and hemoglobin in the blood of sheep infected with the nematode, *Cooperia curticei*.” 19 (2), 40-44.

(42a) Andrews shows that, except for a slight leucocytosis, there is no alteration in the haemoglobin content or cellular elements of the blood of lambs experimentally infected with large numbers of *Cooperia curticei*.

J.W.G.L.

## 43—Nuova Veterinaria.

- a. MARCATO, A., 1938.—“Le alterazioni delle linfoghiandole bronchiali e mediastiniche nella strongilosi polmonare degli ovini.” 16 (1), 9-14.
- b. BARBONI, E., 1938.—“Studio di una infestazione da *Trichuris* in nutrie (*Myocastor coypus*) morte di colibacillosi.” 16 (3), 3-8.

(43a) Marcato has made a histological study of the bronchial and mediastinal lymph glands in 20 sheep infested with lungworm. Six microphotographs illustrate the histological conditions, which include nodule formation, infiltration of eosinophiles and giant cells, lymphocytic hyperplasia, and hyperplasia of the muscular elements.

B.G.P.

(43b) Discussing the death of two nutria, Barboni gives reasons for ascribing it to a *Bacterium coli* infection and for regarding this infection as itself secondary to a heavy infestation with *Trichuris leporis*.

B.G.P.

## 44—Okayama-Igakkaï-Zasshi.

- a. KUYAMA, S., 1938.—“Die jahreszeitliche Veränderung sowie die korrelativen Verhältnisse von in Entwicklungsstadium befindlichen Trematoden.” 50 (2), 327-437. [In Japanese: German summary pp. 327-329.]

(44a) Kuyama has observed monthly for one year the incidence of trematode larvae in the two molluscs *Bulimus* [= *Bithynia*] *striatulus* var. *japonicus* and *Semisulcospira* [= *Melania*] *libertina*, and in the fish *Pseudorasbora parva*. In *B. striatulus*, *Clonorchis sinensis* and 7 other trematodes were found, and cercarial production was most active from May to September. Of over 200,000 metacercariae from *P. parva*, 76% were those of *C. sinensis*, whilst the remainder belonged to 12 other species, which are listed.

B.G.P.

## 45—Parasitology.

- a. WU, K., 1938.—“Progenesis of *Phyllodistomum lesteri* sp. nov. (Trematoda: Gorgoderidae) in fresh-water shrimps.” 30 (1), 4-19.
- b. VIDYARTHI, R. D., 1938.—“Avian trematodes of the genera *Neodiplostomoides* nov. gen., *Bolbophorus* Dubois, 1934, and *Glossodiplostomum* Dubois, 1932.” 30 (1), 33-39.
- c. COLE, H. A., 1938.—“On some larval trematode parasites of the mussel (*Mytilus edulis*) and the cockle (*Cardium edule*). Part II. A new larval *Gymnophallus* (*Cercaria cambrensis*) sp. nov. from the cockle (*Cardium edule*).” 30 (1), 40-43.
- d. CHANDLER, A. C., 1938.—“*Diploscapter coronata* as a facultative parasite of man, with a general review of vertebrate parasitism by rhabditoid worms.” 30 (1), 44-55.
- e. HORSFALL, M. W., 1938.—“A new unarmed cysticeroid, *Cysticercus setiferus*.” 30 (1), 61-64.

(45a) Wu describes the metacercaria stage of *Phyllodistomum lesteri* n. sp., found encysted in the liver and gonads of fresh-water shrimps of the genus *Palaemon*, in China. Although the adult stage and final host are unknown the larva is sufficiently mature to enable it to be distinguished from other species. The forms in the liver reach a higher state of maturity than those in the gonads, eggs to the number of 116 occurring in the uterus of one specimen, and showing developing miracidia. E.M.S.

(45b) Vidyarthi describes *Neodiplostomoides mehrii* n. g., n. sp. from *Hieraetus fasciatus fasciatus* from Allahabad. The new genus is similar to *Neodiplostomum* in body form and general topography, but possesses a well-developed hammer-shaped genital bulb and its testes are drawn out, the anterior into a V-shape, the posterior into an H-shape. From the same host he describes *Glossodiplostomum hieraetii* n. sp., and also *G. buteoides* n. sp. and *Bolbophorus orientalis* n. sp., both from *Buteo rufinus rufinus*. E.M.S.

(45c) Cole describes *Cercaria cambrensis* n. sp. from the cockles of the Menai Straits. It was present in every cockle examined and occurred within sporocysts which formed a brown mass just beneath the hinge. It is believed to be the larva of *Gymnophallus margaritarum*, rather than *Cercaria margaritae*. E.M.S.

(45d) Chandler records the presence of living *Diploscapter coronata*, a rhabditid nematode, in the stomachs of 9 human beings, all of whom had little or no hydrochloric acid in the stomach. He also gives a critical and comprehensive review of the literature of real or alleged parasitism by rhabditid worms in vertebrate hosts. T.G.

(45e) An unarmed cysticercus named *C. setiferus* n. sp. has been found by Horsfall in the thoracic and abdominal cavities of the beetles *Litargus* sp., *Alphitophagus bifasciatus* and *Ataenius stercorator* in Maryland, U.S.A. and in Puerto Rico. Attempts to obtain the adult experimentally failed. R.T.L.

#### 46—Physiological Zoology.

- a. FOLGER, H. T. & ALEXANDER, L. E., 1938.—“The response to mechanical shock by the cercariae of *Bucephalus elegans*.” 11 (1), 82-88.

(46a) The cercaria of *Bucephalus elegans* reacts to mechanical shock by cessation of movement. The reaction time varies inversely with the magnitude of the shock. About 30 seconds are required for recovery.

R.T.L.

#### 47—Phytopathology.

- a. LINFORD, M. B. & OLIVEIRA, J. M., 1938.—“Potential agents of biological control of plant-parasitic nematodes.” [Abstract of a paper accepted for presentation at the 28th Annual Meeting of the American Phytopathological Society, Indianapolis, Indiana, December 27 to 30, 1937.] 28 (1), p. 14.
- b. LINFORD, M. B. & YAP, F., 1938.—“Root-knot injury restricted by a nematode-trapping fungus.” [Abstract of a paper accepted for presentation at the 28th Annual Meeting of the American Phytopathological Society, Indianapolis, Indiana, December 27 to 30, 1937.] 28 (1), 14-15.
- c. TENNYSON, G., 1938.—“Observations on nematodes of buffalo grass and sorghum.” [Abstract of a paper accepted for presentation at the 28th Annual Meeting of the American Phytopathological Society, Indianapolis, Indiana, December 27 to 30, 1937.] 28 (1), p. 21.



(47a) Linford & Oliveira, using transparent low-nutrient media in making observations, have discovered 52 enemies of *Heterodera marioni* which tend to restrict nematode populations. These include 11 nematode-trapping fungi, 1 egg parasite, 6 non-trapping parasites, 1 ecto-parasitic protozoan, 24 predaceous nematodes, 6 mites and 3 predaceous tardigrades. M.J.T.

(47b) Linford & Yap describe an experiment to determine the reduction of injury caused by *Heterodera marioni* in the presence of nematode-trapping fungi. Reduction of pineapple top growth due to infestation of *H. marioni* was 40% but only 28% in the presence of *Dactylella ellipsospora*; reductions in root length were 73% and 57%, respectively. The fungus, experimentally introduced, was found to remain dominant during 15 months. M.J.T.

#### 48—Policlinico (Sezione Pratica).

- a. CIPRIANO, L., 1938.—“Su 4 casi di occlusione intestinale acuta da ascaridi.” 45 (5), 196, 199-202.
- b. ROBERTI, G., 1938.—“Contributo allo studio del trattamento delle cisti da echinococco del polmone con pnx terapeutico.” 45 (6), 233-234, 237.
- c. COEN, V., 1938.—“Il secondo metodo di Antonucci nella cura chirurgica dell'echinococco del polmone.” 45 (12), 533-534, 537-540.

#### 49—Proceedings of the Helminthological Society of Washington.

- a. LUCKER, J. T., 1938.—“Description and differentiation of infective larvae of three species of horse strongyles.” 5 (1), 1-5.
- b. WRIGHT, W. H., BRADY, F. J. & BOZICEVICH, J., 1938.—“Studies on oxyuriasis, VIII. A preliminary note on therapy with gentian violet.” 5 (1), 5-7.
- c. VAN VOLKENBERG, H. L., 1938.—“Check list of parasites found among principal domestic animals in Puerto Rico.” 5 (1), 7-8.
- d. PRICE, E. W., 1938.—“A restudy of *Faustula keksooni* (MacCallum) and *Distomum tropidonoti* MacCallum (Trematoda).” 5 (1), 9-11.
- e. PRICE, E. W., 1938.—“A redescription of *Clinostomum intermedialis* Lamont (Trematoda: Clinostomidae), with a key to the species of the genus.” 5 (1), 11-13.
- f. McINTOSH, A., 1938.—“Description of the adult stage of *Taenia twitchelli* Schwartz, 1924, from an Alaskan wolverine.” 5 (1), 14-15.
- g. CHITWOOD, B. G. & CHITWOOD, M. B., 1938.—“Further notes on intestinal cell inclusions in nemas.” 5 (1), 16-18.
- h. CHITWOOD, B. G., 1938.—“Notes on the physiology of *Ascaris lumbricoides*.” 5 (1), 18-19.
- i. SCHUURMANS STEKHOVEN, jr., J. H., 1938.—“*Spiroxys gedoelsti* Schuurmans Stekhoven, a synonym of *Protospirura numidica* Seurat (Nematoda: Spiruridae).” 5 (1), p. 19.
- j. OLSEN, O. W. & FENSTERMACHER, R., 1938.—“The raccoon, a new host of *Ascaris columnaris* Leidy, 1856 (Nematoda: Ascaridae).” 5 (1), p. 20.
- k. LIMBER, D. P., 1938.—“Notes on the hot-water treatment of *Anguina tritici* galls on wheat and a comparison of an Indian and a Chinese collection by use of weight criteria.” 5 (1), 20-23.
- l. MOORTHY, V. N., 1938.—“Fresh-water nematodes from the intestines of fish.” 5 (1), 24-26.
- m. McBETH, C. W., 1938.—“White clover as a host of the sugar-beet nematode.” 5 (1), 27-28.

- n. CHRISTIE, J. R., 1938.—“Two nematodes associated with decaying citrus fruit.” 5 (1), 29-33.
- o. UNDERWOOD, P. C., HARWOOD, P. D. & SCHAFFER, J. M., 1938.—“Effects of treatment with Brilliant green on some tapeworms infesting poultry.” 5 (1), 33-34.
- p. STEINER, G., 1938.—“Opuscula miscellanea nematologica, VII.” 5 (1), 35-40.

(49a) Lucker gives descriptions of the third stage larvae of *Cylicocercus pateratus*, *Cylicocylus insigne* and *Cylicodontophorus bicoronatus* obtained by culturing separately eggs recovered from the uteri of identified females. The 3 species were found indistinguishable on the basis of size relationships. Structurally *C. pateratus* and *C. insigne* were likewise indistinguishable but *C. bicoronatus* showed recognizable differences in intestinal cell arrangement. Comparison is also made with the infective larvae of the horse strongyles previously described. A study of the intestinal cells of *Cylicocercus goldi* infective larvae shows that the intestinal lumen passes between the contiguous surfaces of the 3 anterior cells and through the cytoplasm of the 5 posterior cells. J.W.G.L.

(49b) Wright, Brady & Bozicevich have successfully treated 112 out of 122 cases of *Enterobius vermicularis* with gentian violet. They consider it necessary to treat all members of a household in order to eliminate this parasite and find gentian violet satisfactory for this purpose as it is safe enough for repeated treatments, is of reasonable cost and easily administered. Contra-indications are briefly mentioned. K.S.

(49c) The helminths found in Puerto Rico between 1924 and 1937 in cattle, horse, pig, goat, dog, cat and poultry are listed. R.T.L.

(49d) *Faustula keksooni* and *Distomum tropidonoti* are redescribed, as important misinterpretations of structure appeared in MacCallum's original descriptions of these species. Poche created unnecessarily the family Faustulidae on the assumption that the original description of the species was correct. In MacCallum's description of *D. tropidonoti* the anterior testis was mistaken for the ovary. This species is obviously nearly related to *Xenopharynx* (*Allopharynx*) *amudariensis*. The genus *Allopharynx* contains 4 species for which a key is given. R.T.L.

(49h) Chitwood summarizes the results of two series of experiments with *Ascaris lumbricoides*. These indicate, firstly, that urea is obtained from the host and is not a normal waste product, and secondly, that the oesophageal glands contain a proteolytic enzyme, inactive at its iso-electric point (pH 8) and most active in a very weak acid solution. R.H.H.

(49k) Limber finds that in wheat galls of Indian origin the larvae of *Anguina tritici* are, on the average, fewer in number and somewhat larger in size than larvae from galls of Chinese origin. The walls of the Chinese galls are slightly thinner than the Indian ones. He reports that in the hot-water treatment of galls, soaked in water for 2 hours prior to treatment, a temperature of 122°F. for 30 minutes is necessary to kill the larvae. T.G.

(49l) Moorthy describes *Dorylaimus krishnaraoi* n. sp. from *Ophicephalus gachua*, and *Monhystrella mysorensis* n. sp. and *Monhystera paludicola* from *Barbus puckelli*. E.M.S.

(49m) McBeth records the occurrence of *Heterodera schachtii* as a parasite of *Trifolium repens* in Utah. Root penetration and the production of giant cells are described. The parasite is stated to cause gall-like swellings. Cysts are described as lemon-shaped and measurements of larvae and eggs are given, these approximate more or less closely to Thorne's measurements of the beet race; the male is described as resembling that of the beet race rather than the race attacking shadscale. M.J.T.

(49n) Christie describes and figures two new nematodes from an agar culture originally inoculated with material from a decaying citrus fruit. (i) *Hexatylys intermedius* n. sp. differs from *H. viviparus* in having a bluntly rounded tail and a very small mouth spear. Males as well as females were found and the worms were maintained on agar cultures along with the fungus *Alternaria citri* for 3 months. (ii) *Prothallonema dubium* n. g., n. sp., is considered as probably a parasite of some unknown insect. The structure of the pre-parasitic female is described and its relationship to other nematode parasites of insects is discussed. T.G.

(49o) Underwood, Harwood & Schaffer obtained the removal of *Choanotaenia infundibulum* and *Raillietina tetragona* from chickens by Brilliant green sulphate, but found the drug inefficacious for the commoner *Raillietina cesticillus* and highly toxic to the host. The less soluble Brilliant green picrate proved no more efficacious and almost as toxic. The authors consider that the abnormal rate of intestinal secretion produced by Brilliant green may serve to protect the heads of tapeworms from injury by the chemical. K.S.

(49p) Steiner found a number of nematodes in warty lesions on a potato tuber. Two Cephalobids are described as new, namely, *Zeldia odontocephala* n. sp., and *Acrobeloides enoplus* n. sp. *Criconemoides sphaerocephalum* is reported as an ectoparasite of cotton roots from North Carolina. The author describes and figures sporozoan parasites in the bodies of 6 different species of nematodes obtained from the warty lesions on the potato tuber. T.G.

## 50—Proceedings of the Indian Academy of Sciences. Section B.

- a. PANDE, B. P., 1938.—“The trematode genus *Allocreadium* in North Indian fresh-water fishes.” 7 (2), 54-60.

(50a) Pande reviews the genus *Allocreadium*, rejecting as *species inquirendae* *A. annandalei*, *A. fowleri* and *A. pisacanthi*, as being inadequately described. He describes *A. nicolli* n. sp. from *Gobius giuris*, and *A. kosia* n. sp. from *Barbus chilinoides*. E.M.S.

## 51—Proceedings of the Royal Society of Medicine.

- a. DUNGAL, N., 1938.—“Epizootic adenomatosis of the lungs of sheep: its relation to verminous pneumonia and Jaagsiekte.” 31 (5), 497-505.
- b. TAYLOR, E. L., 1938.—“The lungworm theory for the origin of epizootic adenomatosis and the question of the existence of adenomatosis in Great Britain.” 31 (5), 505-508.

(51a) An adenomatous condition of the lungs causing 50 to 60% loss has raged in sheep in Iceland. Dungal has failed to find any correlation



between this disease, in which there are histological changes of a very specific nature, and lungworm infestation. Nor is there reason to suppose that the worms play any part as intermediaries.

R.T.L.

(51b) Taylor, after experimental studies, confirms Dungal's conclusion [see previous abstract] that there is no etiological association between the epizootic adenomatosis of sheep in Iceland and lungworm infestation due to *Muellerius capillaris*.

R.T.L.

## 52—Public Health Reports. Washington.

- a. SAWITZ, W., 1938.—“Prevalence of trichinosis in the United States.” 53 (10), 365-383.
- b. ALICATA, J. E., 1938.—“A study of *Trichinella spiralis* in the Hawaiian Islands.” 53 (10), 384-393.

(52a) The yearly incidence of trichinosis has increased in recent years in the U.S.A., but since there is a parallel rise in the morbidity rate, this is not due solely to expansion of the reporting areas. The death rate has declined considerably, indicating a greater frequency of mild cases, due possibly to a dilution factor in the preparation of pork products, while the disease is more prevalent in winter owing to the greater pork consumption at that time. The disease shows the highest incidence in the eastern and western parts of the U.S.A., while the general incidence is 12.34% of the population.

V.D.V S.

(52b) A survey on the Hawaiian Islands has shown that *Trichinella* occurs in the rat (all four species, the incidence for each species differing according to locality and habits), mongoose, and wild and domestic hog in Hawaii, and in the mongoose and rat in Maui. Wild hogs show a higher incidence of infection than domestic hogs, the latter being reared under proper sanitary conditions. In addition Alicata reports 11 cases of trichinosis in humans in Hawaii and Maui.

V.D.V S.

## 53—Riforma Medica.

- a. SERGENT, E. & FOURESTIER, M., 1938.—“A proposito di due osservazioni di cancro e di cisti idatidea del pulmone.” 54 (4), 164-171.

## 54—Rivista di Parassitologia.

- a. COTRONEI, G., 1938.—“Battista Grassi maestro della parassitologia moderna.” 2 (1), 73-78.

## 55—Science.

- a. SCOTT, A. C., 1938.—“Cleaving nematode eggs as research and classroom material.” 87 (2250), 145-146.
- b. GLASER, R. W. & STOLL, N. R., 1938.—“Development under sterile conditions of the sheep stomach worm *Haemonchus contortus* (Nematoda).” 87 (2255), 259-260.

(55b) The successful cultivation of bacteria-free larvae of *Haemonchus contortus* up to the infective stage in a suitable medium and their further development to the fourth stage parasitic forms is reported by Glaser & Stoll.

The infective larvae were washed by sedimentation in sterile water and Labarraque's solution, 1 in 20 parts of distilled water, was used to expedite the sterilization and to cause exsheathment. The exsheathed larvae were transferred finally to Ringer's solution and incubated for 3 weeks in a medium consisting of 0.5% agar in Ringer's solution to which were added sheep-liver extract, heat-killed ground yeast and sheep blood and kidney. The reaction was adjusted to pH 3.0. Two or three drops of defibrinated sheep blood were added to the surface of the semi-solid medium prior to inoculation with several drops of the exsheathed larvae in Ringer's solution. The cotton-plugged tubes were then sealed with sealing wax and incubated at 39°C. The larger forms obtained are about 5 times the length of the inoculated exsheathed larvae. They show the characters of the last third of the fourth larval stage as described by Veglia, and are comparable with those at about the 6th day of parasitic life in the abomasum. Further slight modifications of the medium are apparently required for the production of adults. R.T.L.

### 56—Scientific Horticulture.

- a. HODSON, W. E. H., 1938.—“Diseases and pests of chrysanthemums.” 6, 67-71.
- b. WILSON, G. F., 1938.—“Pests of commercial ornamental plants.” 6, 102-116.

(56a) In a short general survey of the diseases and pests of chrysanthemums, Hodson devotes a brief section to the eelworm, *Aphelenchoides ritzema-bosi*. He describes the chief symptoms caused by it and discusses methods of control. T.G.

(56b) In considering some of the commoner pests of ornamental plants Fox Wilson has a section on the stem eelworm, *Anguillulina dipsaci* and one on the leaf eelworm, *Aphelenchoides olesistus*. In the case of each parasite he indicates some of the chief hosts among ornamentals and briefly discusses certain control measures. T.G.

### 57—Soil Science.

- a. LINFORD, M. B., YAP, F. & OLIVEIRA, J. M., 1938.—“Reduction of soil populations of the root-knot nematode during decomposition of organic matter.” 45 (2), 127-140.

(57a) Linford, Yap & Oliveira describe the effects of decomposition of organic matter added to soil containing *Heterodera marioni* larvae. Significant reduction in the number of parasites was constantly found. Chopped pineapple plants at the rate of 150 tons per acre gave the maximum result, 200 tons proving no more effective. Fineness of chopping and frequency of mixing with the soil during decomposition produced little variation in the results, but oven drying followed by wetting increased the effect. Experiments showed that the population of *Heterodera* larvae was reduced early and that some factor other than the death of the larvae was operative. Great increases in free-living nematodes and in predaceous nematodes, nematode-trapping fungi and nematode parasites, followed the introduction of decomposing material to the soil. These caused reduction of the *Heterodera*

larvae. Pineapple and cowpea growth did not suffer and in some cases benefited following the soil treatment. Dangers of the treatment are pointed out. M.J.T.

### 58—South African Medical Journal.

- a. CAWSTON, F. G., 1938.—“The cause and treatment of bilharzia disease.” 12 (2), 51-52.

### 59—Tierärztliche Rundschau.

- a. LÜHRS, E., 1938.—“Planmässige Bekämpfung der Leberegelseuche.” 44 (3), 41-45.  
b. REINHARDT, 1938.—“Rind mit *Coenurus cerebralis*.” 44 (6), p. 91.

(59a) In the control of fascioliasis, Lührs points out the importance of forecasting a severe outbreak. He has examined the rainfall records for the months April to October in the years 1925 to 1937, and abattoir statistics of fascioliasis for the months November to March (when the animals are inside) over the same period. Comparison shows that there is normally a lag of over a year. Thus the summer drought of 1925 causes a drop in the fascioliasis cases in the winter 1926-27. Another point is that, even in response to dry summers, the incidence of fascioliasis in animals (in Oldenburg) does not fall below 63%. Lührs considers that most *Limnaea truncatula* will be too small to survive miracidial penetration until about August; cercariae will not be developed until October-November and will probably not be discharged until the following spring.

Abattoir statistics of monthly incidence of fascioliasis show for cattle a maximum in November and subsidiary maxima in August and January, and for sheep maxima in June and January. He argues that these are the most favourable months for treatment. Treatment locally is now organized accordingly, the solid drug Igitol being used.

Pastures are best treated by drainage so as to give a waterspeed of 40 to 50 cm. per sec. If this is not practicable, ditches and marshy areas can be fenced off; if they have been used for drinking, a trough can be constructed outside the fence, filled with water, and then treated with copper sulphate to produce a solution of 1 in 20,000 to 1 in 50,000. Larger areas can be treated with calcium cyanamide at the rate of 4 Zentner per hectare [= 1.6 cwt. per acre approx.] in dry weather: this fertilizer kills the fluke eggs instantaneously. B.G.P.

(59b) Reinhardt shows a photograph of a bovine with *Coenurus cerebralis* illustrating its inability to turn to one side on reaching a wall. J.W.G.L.

### 60—Transactions of the American Microscopical Society.

- a. MANTER, H. W., 1938.—“A collection of trematodes from Florida Amphibia.” 57 (1), 26-37.  
b. WALTON, A. C., 1938.—“The Nematoda as parasites of Amphibia. IV.” 57 (1), 38-53.  
c. REID, W. M., ACKERT, J. E. & CASE, A. A., 1938.—“Studies on the life history and biology of the fowl tapeworm *Raillietina cesticillus* (Molin).” 57 (1), 65-76.



(60a) None of the 10 amphibian trematodes reported by Manter from Florida are new, but 8 new hosts are recorded. The taxonomic position of *Halipegus* is discussed. R.T.L.

(60b) Since the appearance of Walton's first two papers on the nematodes of amphibia which contained records only to 1930, a number of new species and new host and distribution records have been made. These, up to the middle of the year 1936, have been incorporated in this paper. R.T.L.

(60c) Two genera and 12 species of ground beetles (Carabidae) are reported as new intermediate hosts for *Raillietina cesticillus* in fowls. As many as 626 cysticeroids occurred in one beetle fed on 4 proglottids. Gravid segments were produced in 11 to 14 days after experimental feeding with cysticeroids. A complete list of known intermediaries is given. The cysticeroids are characterized by two funnel-like structures in the membranes which surround the hexacanth embryo. Most of the segments voided by chickens are passed in the afternoon and evening. Valuable details are given on technique. R.T.L.

#### 61—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. O'CONNOR, F. W. & BEATTY, H. A., 1938.—"Filariasis of ground doves in St. Croix, Virgin Islands." 31 (4), 407-412.
- b. O'CONNOR, F. W. & BEATTY, H. A., 1938.—"*Wuchereria bancrofti* in mosquitoes of St. Croix." 31 (4), 413-430.
- c. SALAH, M., 1938.—"Mechanism of oedema in helminthic anaemias." 31 (4), 431-436.
- d. LANE, C., 1938.—"Bancroftian filariasis and the reticulo-endothelial system." [Correspondence.] 31 (4), 471-472.
- e. WITENBERG, G. & YOFÉ, J., 1938.—"Investigation on the purification of water with respect to schistosome cercariae." 31 (5), 549-570.

(61a) In 63 out of 65 ground doves in St. Croix a sheathed microfilaria was present in the blood. The adults, *Vagrifilaria columbigallinae* Augustine, 1937, were located in the blood vessels in the neighbourhood of the liver, in the lungs, pancreas and heart, and on 4 occasions in the coils of the intestines. Massive destruction of the microfilariae in the liver was constantly observed associated with varying degrees of cellular response. R.T.L.

(61b) O'Connor & Beatty deal with (i) the incidence of Bancroft's filariasis in St. Croix, (ii) the duration of the larval development of *F. bancrofti* in *Culex fatigans*, (iii) the results of an examination of 5,000 wild female mosquitoes for larval filariae, (iv) the fate of microfilariae and larval filariae in and after leaving *C. fatigans*, (v) the distribution of fully developed larvae in *C. fatigans*, (vi) variations in the local incidence of infections in *C. fatigans*, and concludes with (vii) a brief résumé of the measures applicable to a town such as Christiansted, St. Croix, for the reduction of filariasis. R.T.L.

(61c) In 22 cases of helminth anaemia with oedema, the oedema was found to have a circulatory factor in 3 cases. In 3 cases it was due to the anaemic state. In 12 cases there was hypoproteinaemia and 4 additional cases responded to high protein diet. Salah is of opinion that the deficiencies

in the blood chemistry can be made up and equilibrium thus re-established. The oedema will then disappear and blood regeneration be aided. R.T.L.

(61e) Witenberg & Yofe find that *Schistosoma mansoni* cercariae are killed at once by chlorine 1 part in one million, but in varying times according to the source of the chlorine. If gaseous chlorine is used a sure lethal effect is obtained if after 10 minutes the amount of the available chlorine is 0.25 per million. For a period of exposure limited to 30 minutes 0.6 per million of available chlorine should be present in the water after 10 minutes. If sodium hypochlorite is used a sure lethal effect is to be expected during 65 minutes if there remains 0.28 per million of available chlorine and at most during 30 minutes if 0.42 per million remains after 10 minutes. If chloramine is used a lethal effect is certain in less than 30 minutes if 0.22 per million of available chlorine remains after 10 minutes. High alkaline reaction of pH 11.5 to 11.6 kills the cercariae but high pressure up to 200 atmospheres during 6 hours does not injure them. R.T.L.

## 62—Tropical Agriculture.

- a. HUTSON, L. R., 1938.—“Some observations on Manson's eyeworm of poultry in Antigua, B.W.I., and a suggested method of control.” 15 (3), 66-68.

(62a) Hutson records *Oxyspirura mansoni* in poultry and turkeys in Antigua, B.W.I., and quotes Sanders' life-history of the parasite. Experimental feeding of chickens with infected cockroaches (*Pycnoscelus surinamensis*) and instilling of larvae into the eye, showed that where the nictitating membrane had been previously removed, infection either did not occur or only lasted 10 days. The removal of worms from the eye was only temporarily successful and it is therefore suggested that, as adult worms do not remain in the membranectomized eye, the simple operation of surgical removal of the membrane would be a satisfactory treatment for this parasite. J.W.G.L.

## 63—Veterinary Journal.

- a. MASHETER, J. W. H., 1938.—“The effect of an overdose of santonin on young pigs.” 94 (1), 37-38.

(63a) Masheter reports on the dosing of 70 nine-weeks-old pigs in batches of 10, each batch being given 15 oz. of santonin in mistake for magnesium sulphate. The symptoms exhibited and treatment given are described. No deaths occurred and the pigs were normal in 3 days. From this experience it is stated that santonin is an efficacious anthelmintic and that the therapeutic dose is well below the toxic dose. J.W.G.L.

## 64—Veterinary Record.

- a. BAYLIS, H. A., 1938.—“Notes on some species of the nematode genus *Cooperia* from cattle and sheep.” 50 (10), 283-285.

(64a) Baylis gives a further description of *Cooperia mcmasteri* Gordon, 1932 and records it for the first time in Great Britain. Comparison is made with *C. oncophora*, the principal differences being that the male of *C. mcmasteri*



has more slender spicules and the spicule tip is more the shape of the human foot; differences in the genital cone are also figured. Resemblance to *C. surnabada* is discussed. Observations on other species of the genus lead to the conclusion that *C. nicolli* is a synonym of *C. pectinata*, and *C. fieldingi* a synonym of *C. punctata*.  
J.W.G.L.

#### 65—Zeitschrift für Fleisch- und Milchhygiene.

- a. KOLBE, F., 1938.—“Neueres über die gesundheitsschädlichen Finnen der Schlachttiere und die Finnen des Wildes. Sammelreferat.” 48 (7), 126-127.
- b. MÜLLER, 1938.—“Vergrößerung der Gallenblase im Gefolge einer Leberegelinvasion.” 48 (9), p. 169.

(65a) Concluding his review of recent literature on cysticerciasis [see Helm. Abs., Vol. VI, No. 392a], Kolbe briefly deals in this part with *C. ovis* and *C. cervi*, with which he considers *C. tarandi* (= *C. krabbei*) to be probably synonymous.  
B.G.P.

#### 66—Zeitschrift für Infektionskrankheiten, Parasitäre Krankheiten und Hygiene der Haustiere.

- a. WETZEL, R. & ENIGK, K., 1938.—“Muskelfinnen beim Elch.” 52 (4), 273-281.

(66a) Wetzel & Enigk record from the European elk, *Alces alces*, numerous cysts of *Cysticercus tenuicollis* in the liver and also four muscle cysticerci, from heart and masseter, resembling *C. cellulosae*. From hook measurements and from a feeding experiment in a dog (which produced one headless tapeworm) they conclude that the muscle cysts were also *C. tenuicollis*.  
B.G.P.

#### 67—Zoologischer Anzeiger.

- a. SCHNEIDER, W., 1938.—“*Diplogaster pararmatus* n. n. nebst Bemerkungen über einige andere *Diplogaster*-Arten.” 121 (1/2), 37-43.

(67a) Schneider describes as a new form *Diplogaster pararmatus* and discusses in detail the morphological features in which it differs from *D. armatus*. He also gives an account of the arrangement of the caudal papillae on males of *D. nudicapitatus* and discusses the relationship of this species.  
T.G.

### NON-PERIODICAL LITERATURE.

- 68—STITT, E. R., CLOUGH, P. W. & CLOUGH, M. C., 1938.—“Practical bacteriology, haematology and animal parasitology.” London, 9th Edition, viii+961 pp.

- 69—YAMAGUTI, S., 1938.—“Studies on the helminth fauna of Japan. Part 21. Trematodes of fishes, IV.” Kyōto, 139 pp.



Yamaguti deals with 113 species of fish trematodes, 78 of them new. They are referred to 54 known and 11 new genera. All except 8 are marine forms, the majority Allocreadiidae and Hemiuridae. One new genus, *Notoporus*, is made the type of a new family, Notoporidae, near the Allocreadiidae, but differentiated by the position of the genital pore and the structure of the male terminal genitalia. There are two species, *N. leiognathi* n. sp. and *N. trachuri* n. sp. Other families are reported on as follows: Bucephalidae, 8 species, including *Bucephalopsis scombropris* n. sp., *Prosorhynchus* (*Skrjabinella*) *magniovatus* n. sp., *Pseudoprosorhynchus synodi* n. g., n. sp. Allocreadiidae, 31 species, including *Plagioporus japonicus* n. sp., *P. pacificus* n. sp., *P. apogonichthydis* n. sp., *P. sillagonis* n. sp., *Caudotes neopercis* n. sp., *Maculifer pacificus* n. sp., *Pycnadenoides pagrosomi* n. g., n. sp., *Pseudoplagioporus lethrini* n. g., n. sp., *Decemtestis bera* n. sp., *D. neopercis* n. sp., *D. goniistii* n. sp., *D. megacotyla* n. sp., *D. spari* n. sp., *D. pagrosomi* n. sp., *Hypocreadium patellare* n. sp., *Lepidapedon genge* n. sp., *L. sebastisci* n. sp., *L. luteum* n. sp., *L. hoplognathi* n. sp., *L. coelorhynchi* n. sp., *Pseudolepidapedon paralichthydis* n. g., n. sp., *Opechona scombri* n. sp., *O. hynodi* n. sp., *Cymbephallus japonicus* n. sp., *C. carangi* n. sp., *C. elongatus* n. sp. Pleorchiidae, *Pleorchis sciaenae* n. sp. Opecoelidae, 5 species, including *Opecoelus goniistii* n. sp., *Opegaster macrorchis* n. sp., *O. apogonichthydis* n. sp., *O. tamori* n. sp. Heterophyidae, 5 species, including *Pseudexorchis major* (Hasegawa, 1935) n. g., *Metadena pagrosomi* n. sp., *Bacciger harengulae* n. sp. Monorchidae, 8 species, including *Bivesicula synodi* n. sp., *B. epinepheli* n. sp., *Bivesiculoides atherinae* n. g., n. sp., *Paramonorchoides awatati* n. g., n. sp., *P. sirembonis* n. sp., *Proctotrematoides pisodontophidis* n. g., n. sp., *Asymphylogora japonica* n. sp. Zoogonidae, 5 species, *Zoogonoides acanthogobii* n. sp., *Diphtherostomum magnacetabulum* n. sp., *D. spari* n. sp., *Brachyenteron döderleiniae* n. sp., *B. acropomatis* n. sp. Fellodistomidae, 10 species, including *Tergestia acanthogobii* n. sp., *Rhodotrema lethrini* n. sp., *Paradisogaster chaetodontis* n. sp., *Benthotrema hoplognathi* n. sp., *Piriforma macrorhamphosi* n. g., n. sp., *Symmetrovvesicula chaetodontis* n. g., n. sp. Hemiuridae, 31 species, including *Hemiurus arelisci* n. sp., *Parahemiurus harengulae* n. sp., *P. atherinae* n. sp., *Aphanurus harengulae* n. sp., *Dinosoma tortum* n. sp., *D. synaphobranchi* n. sp., *D. hynodi* n. sp., *D. manteri* n. sp., *D. apogonis* n. sp., *Lecithophyllum fuscum* n. sp., *Lecithochirium japonicum* n. sp., *Tubulovesicula pseudorhombi* n. sp., *Lecithocladium johnii* n. sp., *Aponurus callionymi* n. sp., *A. acropomatis* n. sp., *Hysterolecitha xesuri* n. sp., *Sterrhurus musigarei* n. sp., *S. magnus* n. sp., *Glomicirrus propositus* n. sp., *Genarchopsis anguillae* n. sp., *Derogenes macrostoma* n. sp., *Lecithaster sayori* n. sp. E.M.S.